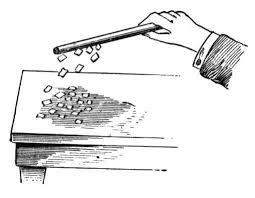
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**Static Electricity Inquiry Lab**

You and your group will be traveling to **5** stations around the room. At each station, follow the directions and answer the questions provided. **You will be recording all of your data and observations on LINED**

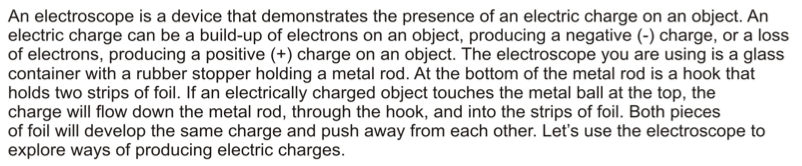
**NOTEBOOK PAPER.**

Directions:

****For each station, record *objective*, *detailed*, and *sequential* **qualitative** **observations**. Include visuals as needed. Answer the questions at each station.

Once you have completed the required inquiry, you may experiment with the materials at your station until your group moves to the next station. Remember, you are collecting detailed **qualitative** data. Include labeled diagrams as necessary.

**Inquiry 1 – Electroscope: Distance Makes the Heart Grow Fonder**



Materials:

Piece of wool

Pencil

Plastic Ruler

Metal Spoon

Construction paper

Scissors

Balloon

Procedure:

1. Look at the materials listed above. Make a prediction about what materials you think carry a charge easily.

2. Test each object by rubbing it quickly with the piece of wool, then holding it **close** to the ball on the electroscope. (If your hear a “snap” (spark sound) the rod was too close. Remove the rod. Repeat this process rapidly.

Making Meaning Questions:

1. Were you surprised by any of the objects that produced an electric charge?
2. Why did you rub the objects with a piece of wool? Would a piece of aluminum foil produce the same results? Try it and see.
3. Did you charge the foil strips via conduction or induction? Why?
4. How long did the charge stay on the electroscope?

**Inquiry 2- Electroscope: Magic From Your Fingertips**

Materials:

Piece of wool

Pencil

Plastic Ruler

Metal Spoon

Construction paper

Scissors

Balloon

Procedure:

1. Look at the materials listed above. Make a prediction about what materials you

think carry a charge easily.

3. Charge a plastic rod by rubbing it with wool or fur.

4. **Touch** the plastic rod to the top of the electroscope. Record observations.

5. **Touch** the top of the electroscope with your finger. Record observations.

Making Meaning Questions

a) Why did the foil strips stay charged when you touched the electroscope?

b) Did you charge the foil strips via conduction or induction? Why?

**Inquiry 3 – Pith Ball/Hostile Balloons**

Materials:

Ring stand with suspended pith ball

Plastic rod

Rabbit fur

2 inflated balloons (tied together with string)

Wool

Pith Ball Procedure:

1. Rub the clear plastic rod with the rabbit fur.

2. Slowly bring the rod close to the suspended pith ball.

3. Observe carefully and record the sequence of events. Include diagrams.

4. To start over, touch the pith ball with your hand. Repeat a few times.

Balloon Procedure:

1. Rub both balloons with the pieces of wool (for at least 10 seconds).

2. Then, hold the string where the balloons are tied together and let the balloons hang downwards from the string.

3. Keep the balloons away from your body.

4. Record your observations and include diagrams.

5. Place the piece of wool next to one of the balloons. Record your observations and diagrams.

Making Meaning Questions:

1. After rubbing the plastic rod with the fur, what is the charge of the plastic rod?
2. What is the charge of the fur?
3. How do they get this charge? (Discuss and explain the movement of charges)

**Inquiry 4 – Induction of Paper**

Materials:

Tissue paper pieces

Hole-punches of paper

Aluminum foil pieces

Rice Krispies cereal

Rabbit fur

Plastic rod

Procedure:

1. Rub a clear plastic rod with rabbit fur.

2. Hold the plastic rod (horizontally) slightly above the bits of tissue paper.

3. Carefully observe and record what happens.

4. Rub the rod with the fur again and repeat this procedure with the circles of hole-

punches of paper.

5. Observe and record what happens.

6. Repeat this procedure with the aluminum foil pieces and cereal pieces. Observe

and record what happens.

Making Meaning Questions:

1. How are your results similar? (What do materials the materials have in common that are attracted to the rod?)
2. How are your results different? (What is different about the materials and their behavior?)
3. A negatively charged rod approaches neutral tissue paper, paper circles, aluminum foil, and rice cereal. What happens to the charges in these objects? Why do they attract to the rod?
4. Draw a diagram of a “magnified” (close-up) piece of tissue paper to show what is happening to the charges (+ and -) in the object.
5. Record one question you have about this inquiry.

**Inquiry 5 – Salt ‘n Peppah’s Here!**

Materials:

Pepper and salt (on a paper plate)

Wool

Flannel

Silk

Rabbit fur

Plastic comb

Balloon

Plastic rod

Glass rod

Procedure:

1. Attempt to separate the salt and pepper using the provided materials and static

electricity. (How can you lift just the salt or pepper?)

2. Record your attempts and observations.

Making Meaning Questions:

a.) How did you separate the pepper and salt?

b.) Explain the reasoning behind your method.

c.) Record one question you have about this inquiry.